

Claims

- [c1] A light guide module for a backlight module, comprising:
a light guide pipe having a light emitting surface, and a
light incident surface orthogonal to the light emitting
surface; and
a light diffusion arrangement deployed on the light
emitting surface, the light diffusion arrangement includ-
ing organic scattering balls homogenously mixed within
a bonding agent.
- [c2] The light guide module as recited in claim 1, wherein a
grain size of the organic scattering balls ranges from 10
to 15 micrometers.
- [c3] The light guide module as recited in claim 1, wherein the
material for making organic scattering ball is selected
from a group of Polymethyl Methacrylate, Polycarbonate,
and Methallocene Cyclic Olefin Copolymer.
- [c4] The light guide module as recited in claim 1, wherein the
bonding agent is acrylic bonding agent.
- [c5] The light guide module as recited in claim 1, wherein the
scattering balls are homogenously distributed over the
light emitting surface.

- [c6] The light guide module as recited in claim 1, wherein a density of the scattering balls becomes greater as distance from the incident surface becomes greater.
- [c7] The light guide module as recited in claim 1, wherein the light guide further includes a dot-web located on a surface opposite to the light emitting surface.
- [c8] The light guide module as recited in claim 7, wherein the dot-web located on a surface opposite to the light incident surface.
- [c9] The light guide module as recited in claim 7, wherein a density of the dot-web increases as a distance from the light incident surface.
- [c10] The light guide module as recited in claim 1, wherein the light incident surface and the light emitting surface are arranged to one another.
- [c11] A back light module, comprising:
 - a light pipe module having a light emitting surface, and a light incident surface angled with regard to the light emitting surface;
 - a light diffusion arrangement integrally formed on the light emitting surface, the light diffusion arrangement including organic scattering balls homogenously mixed

within a bonding agent; and
at least a light source arranged adjacent the light incident surface.

[c12] The back light module as recited in claim 11, wherein a dot-web made from highly refractive diffusion material, is formed on another surface of the light pipe module opposite to said light emitting surface.

[c13] A method for making a light guide module, comprising the steps of:
providing a light pipe a light emitting surface;
providing organic scattering balls mixed with bonding agent to form a mixture; and
spreading the mixture over the light emitting surface of the light guide.

[c14] The method as recited in claim 13, further comprising a step of forming a dot-web arrangement over a different surface of the light pipe.